APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/287,214	04/05/1999	JOSEPH MIDDLETON	CISCP628	6022

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EXAMINER
HOANG, PHUONG N

ART UNIT	PAPER NUMBER
2126	13

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 March 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>14 - 33</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>14 - 19, 21 - 26, and 28 - 32</u> is/are rejected.

7)☒ Claim(s) <u>20, 27, and 33</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 14 – 33 are pending for examination.

Claim Objections

2.   Claim 29 is objected to because of the following informalities: it depends on itself.

As examining purpose, the claim has been treated as dependent on claim 21.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 14, 21, and 30 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over Rozario, US patent no. 6,253,262 in view of Stiffler, US patent

no. 5,115,499.

5.   Rozario and Stiffler references were cited in the last office action.

6.   **As to claim 14**, Rozario teaches the steps of

dynamically partitioning (dynamic allocate of new requests into the buffer based

on the priority of the new request, col. 10 lines 35 – 41) into a plurality of priority lists,

directing a new data belonging to a highest priority list (the new access request is

a high priority request,.... Before all the low priority requests, col. 5 lines 25 – 38),

reading data (read, col. 6 lines 19 – 25 and col. 7 lines 15 – 20) non-empty

priority list;

transferring data without movement between storage cells (shifting dynamics of

the pointers 110 and 112, col. 6 lines 15 – 18, col. 9 lines 58 – 62, and col. 11 lines 50 -

55); and

wherein after reading said data and transferring said data, said data is

maintained on said next lower priority list within said memory device

Rozario does not explicitly teach transferring data read from said highest priority

non-empty priority list after reading; wherein after reading said data and transferring

said data, said data is maintained on said next lower priority list within said memory

device.

Stiffler teaches the steps of transfer read data after from highest to a next lower

priority list without movement from memory device (after the task has been read from

memory, ... next highest-priority task on the queue of tasks, col. 1 lines 34 – 60);

wherein after reading said data and transferring said data, said data is maintained on

said next lower priority list within said memory device (data is still maintained in priority

order after reading and transferring, col. 1 lines 34 – 60).

It would have been obvious for one of ordinary skill in the art at the time the

invention was made to combine the teaching of Rozario and Stiffler's system because

Stiffler's shifting data read always maintain the priority list in order.

7.   **As to claim 21,** this is apparatus claim of claim 14. See rejection for claim 14

above.

8.   **As to claim 30,** it is an apparatus claim of claim 14. See rejection for claim 14

above. Further, Rozario teaches a memory control engine (engine used to read

operation, col. 6 lines 19 - 25).

9.   **Claims 15 – 19, 22 – 26, and 31 - 32 are rejected under 35 U.S.C. 103(a) as**

being unpatentable over Rozario, US patent no. 6,253,262 in view of Stiffler, US

patent no. 5,115,499, and further in view of Sherlock, US patent no. 6,269,413.

10.   Sherlock reference was cited in the last office action.

11.   **As to claim 15,** Rozario teaches the step of write pointer (write pointers, col. 5

lines 56 – 67). Rozario and Stiffer do not explicitly teach a plurality of read pointers.

Sherlock teaches the step of a plurality of read pointers (read and write pointers, col. 4 lines 37 – 45).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching of Rozario, Stiffler, and Sherlock's system because Sherlock's read pointers would support dynamic memory allocation.

12.   **As to claim 16**, Rozario modified by Sherlock teaches the step of writing data to a location in the memory determined by write pointer (it is the functionality of write pointer) and incrementing the write pointer (each write operation .... Increment, col. 9 lines 26 – 35).

13.   **As to claim 17**, Rozario modified by Sherlock teaches the step of reading data from a location determined by read pointers (it is functionality of read pointer) corresponding to the highest priority non-empty list (see explained in claim 14).

14.   **As to claim 18**, Sherlock teaches the steps of a count register (read and write pointers in conventional FIFO buffer systems are maintained by counters, the read and write pointers in buffer system 400 are maintained in register files, col. 4 lines 38 – 40 and col. 9 lines 26 - 35).

15.   **As to claim 19**, Sherlock teaches the steps of incrementing the read pointer, count registers (increment one of read counter, col. 9 lines 26 – 36).

16.   **As to claims 22 – 26,** see rejection for claims 15 – 19 above.

17.   **As to claim 31,** Rozario teaches the step of write pointer (write pointers, col. 5 lines 56 – 67). Rozario and Stiffer do not explicitly teach the step of a plurality of read pointers.

Sherlock teaches the step of a plurality of read pointers (read and write pointers, col. 4 lines 37 – 45).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching of Rozario, Stiffler, and Sherlock's system because Sherlock's read pointers would support dynamic memory allocation.

18.   **As to claim 32,** Sherlock teaches the steps of a count register for each of each priority lists indicating an allocated number of storage cells (m FIFOs .... Registers, col. 6 lines 1 – 15).

19.   **Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rozario, US patent no. 6,253,262 in view of Stiffler, US patent no. 5,115,499, and further in view of the admitted prior art (APA) pages 1 – 2.**

20.   **As to claim 28 and 29**, Rozario and Stiffler do not teach the step of the data

read represents a retransmission task.

The APA teaches the step of retransmission task (retransmission request, pages

2 first paragraph).

It would have been obvious for one of ordinary skill in the art at the time the

invention was made to combine the teaching of Rozario, Stiffler, and the APA's system

because the APA's retransmission request would be needed to read data to from the

memory.

Allowable Subject Matter

21.   Claims 20, 27 and 33 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

22.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Thron et al., US patent no. 3,648,252, demonstrating a multiprocessor computer system with a predetermined priority arrangement.

Bonola et al., US patent no. 6,173,373, demonstrating an apparatus for implementing stable priority queues, wherein the count numbers associated with each node.

23.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong N. Hoang whose telephone number is (703) 605-4239. The examiner can normally be reached on Monday - Friday 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703)305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ph

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